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filaments. Nevertheless these filaments can be determined beyond a doubt, by a sufficiently high power lens.

Under these circumstances the speaker believed that the difference between the two species is that of development only.

Note on Stemonitis maxima Sz.—MR. WINGATE remarked that he had carefully examined the type of this *Stemonitis* in the Schweintiz collection in the herbarium of the Academy, and although the specimen is very old and has not been handled with the care which is now bestowed upon these delicate forms of the Mycetozoa, the speaker was gratified to find a remnant of capillitium which contained spores enough to identify the species with one of the commonest forms found in this vicinity. This very common species will probably be found in most herbaria under the name of *Stemonitis fusca* (Roth) Rost. but on comparing it with an authentic specimen of the latter species the distinctness of the two species is very apparent. Mr. J. B. Ellis has sufficient material at present of *Stemonitis maxima* Sz. and proposes to issue it shortly in Ellis & Everhart's " North Amer. Fungi." The speaker was indebted to Mr. Geo. Massee of Kew Gardens, London, for authentic specimens of several species of *Stemonitis*, and hoped with this aid to be able to identify our American species and make the same the subject of a future communication.

DECEMBER 23.

Mr. CHAS. P. PEROT in the chair.

Thirty-one persons present.

A paper entitled " Palæosyops and Allied Genera," by C. Earle was presented for publication.

The Development of Bacillus tuberculosis.—DR. SAMUEL G. DIXON made the following summary report of his work in the Bacteriological Laboratory of the Academy with special reference to investigations on the tubercle bacillus. The communication was read at the meeting of the 18th ult., publication being deferred in consequence of the author's immediate departure for Europe:—

Our experiments show that the *Bacillus tuberculosis* is capable of changing from its commonly recognized rod form to that of a more compound one. Some of the rods assume a club shape, while further on in the cycle of life, they become branched, many organisms showing at least one distinct branch.

When these forms, including some ordinary shapes, are placed on a pabulum, rich in glycerine and poor in pepton, yet suited to their existence, the culture medium within a few weeks shows an increase of foreign matter. This includes not only a few of the complex forms but many ordinary rod bacilli. Time, however, produces an increase of the more complex micro-organisms, which may be a degenerate form of the bacillus.

There would appear to be in this homogeneous mass something other than the bodies of the micro-organisms. This may be the residue of the pabulum remaining after the bacilli have selected what was necessary for their existence, or a digestive secretion, or again it may be an excretion of the live organism. Let this be as it may, I hope to find a changed functional action in the organism in its secretion or excretion, that would combat tuberculosis in animal life, either by stimulating the cells or by causing a chemical reaction in the tissues that were susceptible to the digestive secretion of the tubercle bacillus.

An attempt to explain its probable action appears in an article I wrote for the " Medical News" of October 19th, 1889, and also in the " Medical and Surgical Reporter," and the " Times and Register" of this year. The views expressed are, however, purely hypothetical.

When the mass that I have already spoken of as being found on the pabulum was subjected for a considerable length of time to various degrees of heat and injected into the guinea pig, the animal seemed to sicken, yet only for a short time. The animals so treated appear to resist injections of virulent bacilli. Whether this would produce immunity for any length of time, provided we discontinue the administration of the remedy, I am not sure. Some animals injected with virulent matter after the treatment with the changed mass had been discontinued, appear to be immune; and experiments on animals suffering with tuberculosis have resulted most satisfactorily.

From the fact that I believe an inorganic matter would be less dangerous in the treatment of tuberculosis than organic matter, work on the following lines is being carried out.

First of all, we have tried the subcutaneous injection of Trypsin into tuberculous animals. The rationale of this will be patent to all.

Then again we have introduced the respective bile constituents into the blood of tuberculous animals. This was suggested by the condition of liver and bile found in them.

Another method we have employed has been to introduce germicides directly into the spleen, thereby bringing the drug in contact with the blood corpuscles when in, probably, a susceptible state.

We have also introduced germicides into the intestinal tract, accompanied with predigested food stuff. In this method, we have the germicide in contact with the intestinal glands, when the latter are in an inactive state of absorbing.

The animals have been kept under strictly hygienic surroundings. The results have varied much. While one has been unsatisfactory, another has been promising.

At this stage, a cablegram from Berlin has informed us that Prof. Koch of that city, has succeeded in producing a lymph that does combat tuberculosis in man. Believing the reports, I feel convinced that he has brought his researches to a higher degree of refinement than that accomplished at this time in our laboratory. I intend, therefore, to sail for Berlin in the interest of humanity, as well as in the interest of the Academy and the Jefferson Medical College and Hospital.

My fervent wish is that those who have had hope of cure breathed into them by the Hon. Prof. Koch will enjoy a full realization and that I may return better understanding micro-organic life and armed with that which will hereafter check the tubercle bacillus in its devastations in the animal economy.

DECEMBER 30.

Mr. THOMAS MEEHAN, Vice-President, in the chair.

Thirty-one persons present.

The following were ordered to be printed:—